

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

A281.9
Ag83E
exp. 2

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

JUN 5 - 1963

CURRENT SERIAL RECORDS

May 1963

ERS-127

INCREASING BROILER SALES THROUGH OFFERING
AN ADDITIONAL CUT AND RECIPE MATERIALS
(A Preliminary Report)

UNITED STATES DEPARTMENT OF AGRICULTURE
Economic Research Service
Marketing Economics Division
Washington, D. C.

PREFACE

This study was conducted by the U.S. Department of Agriculture in cooperation with the National Broiler Council. It is part of the Department's continuing program of research to provide marketing groups and agricultural producers with information to aid in expanding the demand for agricultural products and increasing marketing efficiency. Sales data collected by the Council in one test city were combined with data obtained by the Department in a second test city to provide the analyses reported in this publication. Tests were conducted for six weeks starting August 20, 1962.

The study was under the general direction of Peter L. Henderson, Leader, Development Analysis Group, Market Development Branch, and Dr. R.J. Krueger, Research Director of the National Broiler Council. Merle Thomas, Director of Merchandising for the National Broiler Council, assisted in selection of the methods tested and in planning and coordinating all phases of the study.

Albers Super Markets, a Division of Colonial Stores, Inc., Columbus, Ohio, and Liberal Markets, Inc., Dayton, Ohio, provided the test stores and their personnel implemented the test treatments as prescribed by the research specifications.

SUMMARY

Changes in retail merchandising practices for broilers, primarily the accelerated trend toward merchandising selected parts, has resulted in problems in selling backs, necks, and sometimes wings. A large volume of these parts are either sold at extremely low prices, or disposed of as waste. Costs involved with the unsalable parts must be included in the price customers pay for the preferred cuts and may adversely affect the total movement of broilers.

The sales effectiveness of broiler quarter cuts, a practice employed by some retailers as a means of selling backs and wings (cuts in weak demand at the retail level), is evaluated in this study.

Total broiler sales in retail food stores increased an average of 16 percent when the quarter cut was added to broiler displays. The normal display of whole birds, whole-cut-up birds, and individual parts (leg, breast, thighs, etc.) served as a basis of comparison in 12 supermarkets over a period of 6 weeks starting August 20, 1962. In one test city, where quarters had been advertised and merchandised prior to the study, 14 percent of broiler sales were in quarters when this cut was tested. Only 3 percent of sales were in quarters in a second market, where quarters were relatively unknown. However, in both cities, additional display area was allotted to broilers when quarters were offered. The combination of the additional cut and display area increased sales.

Sales differences were not measurably affected when a label with a recipe was attached to broiler packages, a recipe leaflet was displayed at point-of-purchase, or there was no recipe material.

INCREASING BROILER SALES THROUGH OFFERING
AN ADDITIONAL CUT AND RECIPE MATERIALS

Sidney E. Brown
Agricultural Economist
Marketing Economics Division
Economic Research Service

INTRODUCTION

The tremendous expansion in broiler-fryer production in the last decade has been accompanied by major changes in retail merchandising practices. Dressed and eviscerated broilers initially were sold almost exclusively as whole birds. They are now offered in the form of whole-cut-up birds and by individual parts in most retail food stores. The practice of merchandising chicken parts has grown to meet more selective demand.

In addition, retailers have been stimulated to merchandise chicken parts because of the wider margin that these afford compared to the more competitively priced whole bird. Competition in featuring whole and whole-cut-up broilers has resulted in some retailers selling chickens below cost. 1/ The price margins of selected parts cover more nearly the retailer's cost of operation.

Acceptance of individual broiler parts indicates the desire of some consumers to have a variety of cuts available. Although merchandising individual parts permits consumer selection of desired pieces, this often results in a surplus of the less preferred parts. The problem cuts have been backs, necks, and sometimes wings -- pieces which may not always be sold even at reduced prices. Thus, when the retailer cuts and sells individual parts, he may have to discard the less desirable ones. This means that the cost involved with the unsalable parts must be included in the price consumers pay for the salable parts and may adversely affect total movement of broilers.

Some retailers who encounter difficulty in selling less preferred pieces now purchase selected parts from a supplier. However, this does not eliminate the problem of disposing of backs, necks, or wings. Instead, the problem is shifted to the supplier. 2/ Some processors used the export market to dispose of the less preferred broiler parts, but increases in import duties in European markets have lessened the suitability of this outlet. The pet food market provides another outlet for these parts, but at lower return than from the market for human consumption.

1/ Saunders, Richard and Stoddard, Everett, Effects of Fryer Specials on Supermarket Sales and Profits, Misc. 643, Maine Agr. Expt. Sta., Orono, Maine, Sept. 1960.

2/ As an example of the trend in processor cutting, 38 percent more young chicken was cut up, under Federal Inspection in Jan.-Feb. 1963, than for the same months a year earlier. Total slaughter for the same period only increased 17 percent. See "Poultry Slaughtered Under Federal Inspection and Poultry Used in Canning and Other Processed Foods," Statis. Reptg. Serv., U.S. Dept. Agr., April 1963.

Some retailers are merchandising broiler quarters to sell backs and wings. This is a cut obtained by splitting the bird down the back and leaving a portion of the back on the leg and breast quarters. The trend to merchandising quarters has grown noticeably the last 12 months. The potential for quarters needs to be scrutinized further by the broiler industry and the retailer, in view of the increasing problem of selling backs, both at the processor and the retail level. The practice of merchandising quarters could prove a detriment if this cut meets with customer resistance and retards the movement of broilers. On the other hand, if consumer reaction is favorable and total broiler (whole and part) volume remains the same or increases when quarters are added, this cut would benefit the broiler producer, retailer, and consumer.

Quarters could be sold to the consumer at a lower price per pound than the breast or leg part, with edible meat costing less per pound (table 1). Sale of backs as part of quarter pieces could result in further price savings to customers through lower prices for all parts, than if the backs were discarded and the cost added to the selling price of preferred pieces. Producers also would benefit if a more equitable distribution of prices among parts and availability of still another cut increased movement of broilers.

Table 1.--Estimated yield and relative price per pound of edible meat from individual broiler pieces and from quarters, raw meat weight

Selected Retail Cuts	Yield ^{1/} (percent)		Price per pound (cents)	
	Meat	Bone	Retail cut	Edible Meat
Breast and ribs	71	29	69	97
Back	54	46	9	17
Breast quarter	69	31	^{2/} 61	88
Leg	69	31	59	86
Back	54	46	9	17
Leg quarter	65	35	^{2/} 46	71

^{1/} Ratios of raw meat to bone are based on a test of 49 birds to be reported in "Composition of Foods, Raw, Processed, and Prepared," U.S. Dept. Agr. Handbook 8 (revision in press). For the above example, ribs (48.8 percent meat and 51.2 percent bone) were combined with breast (79 percent meat and 21 percent bone) to give the ratio cited. The yield of meat to bone would be expected to be higher for the rear portion of the back, but the same ratio for both was used in lieu of available data on rear and fore portion yields.

^{2/} This is the estimated price that would give the retailer the same gross return for quarters as he would receive for the breast, leg, and back sold individually at the prices stated.

Means of conveying recipe information to customers also was tested. Recipes were investigated to increase variety in broiler dishes. There is potential for increasing broiler consumption through introducing more variety in chicken dishes according to a 1956 survey; ^{3/} however, information is lacking on effective means of conveying recipe information to consumers.

Methods Tested

Specific cutting practices compared were: (1) The regular broiler cuts that retailers normally stock, including whole birds, whole-cut-up birds, breast, thighs, legs, wings, and backs cut and packaged individually; and (2) these same cuts with the addition of quarters to the broiler display. ^{4/} Breast and leg quarters were offered in separate packages and priced generally at 10 cents per pound below the individual breast or leg price. Quarter packages were identified by a red and white label stating "Quartered," but received no special advertising.

The recipe methods tested were: (1) A leaflet, placed in a holder at the back of the poultry case; and (2) a label attached to at least 50 percent of the packages in the broiler display. ^{5/} A control treatment in which no recipe material was presented was used as a basis of comparison.

PROCEDURE

The test was conducted over a 6-week period beginning August 20, 1962. Two midwestern markets -- Dayton and Columbus, Ohio -- were selected for the study. In Dayton, broiler quarters had been merchandised extensively during the previous year. This cut was relatively unknown in Columbus. Six supermarkets were selected from a single retail food organization in each city to insure common merchandising and advertising practices. Within one organization, cutting methods, meats displayed, and weekly meat features were likely to be more uniform than among different organizations. Hence, sales differences due to operating practices were less than from a sample of stores from several organizations.

In both cities, retailers purchased broiler parts pre-cut. They prepared "whole-cut-up" and quartered birds in the store. Other parts were prepared only for fill-in needs and special requests. Each retailer generally displayed whole birds, whole-cut-up birds, breast, legs, wings, and thighs. Backs and necks were offered in some stores.

^{3/} Weidenhamer, Margaret. Consumer Preferences, Usages, and Buying Practices for Poultry and Poultry Products. Mktg. Res. Rpt. 252, U.S. Dept. Agr., June 1958.

^{4/} The retailer was neither requested to give broilers additional display nor to limit display to the space occupied without quarters. Any change in display area associated with merchandising quarters was considered to be interrelated with the effect that this practice had on broiler merchandising.

^{5/} The leaflet was 3 3/4 by 9 inches in size and contained 12 broiler recipes. The label had either of two recipes and measured 2 by 2 inches.

The stores in each city were distributed geographically as a means of obtaining representation of consumers from all socioeconomic groups. The average volume of broiler sales in the test stores ranged from about 1,500 to 3,400 pounds per week.

A factorial experimental design was used in assigning test treatments to stores and time periods in each city. Treatments were assigned so that during any test week, in each city, half of the six test stores displayed quarters and half, no quarters. In like manner, a third of the same test stores used recipe folders, one-third used labels, and the remaining third, no recipe information. (See Appendix A)

Sales associated with each component were tested against random sale changes to determine if these were no greater than chance fluctuations or were real sales differences. (See Appendix B)

FINDINGS

Quarters

Total broiler sales increased in Dayton and Columbus when quarters were displayed in test stores. The increase was significantly greater than sales differences expected from chance or random variation at an acceptable probability level. This was after adjustments for differences in sales between weeks. There was no need for adjustments for changes in customer traffic and purchasing power as reflected by total store sales. The traffic and sales were practically the same whether quarters were included in broiler displays or not. However, the sales increase that occurred when quarters were present were related to the additional display area devoted to broilers.

Total broiler sales increased 15 percent in Dayton and 17 percent in Columbus when quarters were displayed during the 6-week test period. ^{6/} In both cities, an average of 11 percent more space was allocated to broilers to accommodate quarters when they were added to displays. Also, average sales per square foot of display were 114 pounds when no quarters were present and 122 pounds, or 7 percent greater, when quarters were offered. While these averages and percents are not refined measures, they indicate that retailers gave more display area to broilers when they merchandised quarters. ^{7/} And sales per square foot were greater when customers were offered this additional cut.

^{6/} The Dayton retail cooperator left the first joint of the wing on the breast quarter during the test, a practice that had gained acceptance prior to the study. In Columbus, where there had been no previous merchandising, the breast quarter was sold without the wing because of fear that customers would object, making it difficult to test consumer acceptance of the back as part of the breast and leg.

^{7/} The measurements were not refined. Sales increases per square foot could not be isolated from the contribution of such factors as greater variety of cuts, larger display, lower prices for quarters, and less space given to other meats. A later report will discuss in general the contributions of such factors as advertising, price decline, display area, and other meats on both broiler sales and total meat department sales, but this information will not be for quarters per se.

Total sales included an estimated 14 percent for quarters in Dayton and 3 percent for quarters in Columbus. This may reflect the degree to which quarters had been promoted previous to the study.

In Dayton, quarters had been advertised in newspapers January 1 to August 20, 1962. The cooperating retailer devoted almost one-third of broiler advertising lineage to quarters. All other Dayton food organizations combined gave an average of 14 percent of their broiler advertising to quarters for the same period. Packages were identified during the test by the quarters label normally used by the retailer.

In Columbus, neither the retail organization which cooperated, nor other retailers, advertised quarters during January to August 20, in newspapers. But quarters occasionally were offered in some of the cooperating stores at the discretion of the local meat department manager.

No newspaper advertising appeared in Dayton during the 6-week consecutive study, August 20 to September 30. But, in Columbus, tests were not made during consecutive weeks; one week was skipped so that the retailer could acquaint customers with quarters by advertising the cut. ^{8/} Volume of quarter sales was up during the week the advertising appeared, although lineage represented a small proportion of the regular broiler advertising. But the effectiveness of the advertisement in acquainting customers with quarters was not measurable in terms of sales during the subsequent test week.

The proportion of parts, including quarters, in all sales differed between the two test markets. The distribution of sales in Dayton based on receipts of whole birds, pre-cut parts, and cutting records of meat managers in the test stores was approximately 24 percent whole birds (including barbecued), 44 percent whole-cut-up, and 32 percent parts and in Columbus, 48, 33, and 19 percent, for the same classification, respectively.

A comparison of labor requirements for cutting quarters versus other broiler cuts was intended as a part of the appraisal of the potential for quarters; however, results of this phase of the research were inconclusive. Limited observations in two stores revealed meat department personnel required the same amount of time to cut quarters (three cuts per bird) as whole-cut-up birds (five cuts per bird). ^{9/} With equal proficiency in cutting birds for the two methods, cutters would be expected to require less time per bird with reductions in the number of cuts. Personnel observed in this test were experienced with the whole-cut-up operation but inexperienced in cutting broilers into quarters. It was not possible for cutters to gain proficiency since a small volume of quarters was cut at one time in Columbus, where observations were made. This lessened the conclusiveness of the times observed in cutting broilers by the two methods. Additional research in stores cutting a sizable volume of

^{8/} Analysis was made on a within-city basis; hence, the effectiveness of the design was not disrupted.

^{9/} Times were recorded for the saw operation and did not include times required to get birds from storage to the saw, to wrapping, and to display. These operations were considered to be standard regardless of the method of cutting.

quarters would be necessary for a satisfactory appraisal of cutting time required for each method. 10/

Recipes

Combined sales in the two cities were 2 percent higher when labels were used and 10 percent higher when leaflets were displayed than when there was no recipe information provided. But, these changes were not of sufficient magnitude to be statistically significant. With the number of observations and the random sales fluctuations present in this test, a 19-percent sales change would have been necessary to say that the change was due to recipes.

IMPLICATIONS AND LIMITATIONS OF FINDINGS

From the standpoint of the broiler industry, the presence of quarters as an additional cut in the display case appears to be associated with greater movement of broilers into consumption. Recent trends toward merchandising only parts that sell readily have limited the cuts available to consumers at retail. Backs, wings, and necks are not always displayed. The reduction in the number of bony cuts merchandised has likely resulted in less shelf space for the product than had all cuts been merchandised. The practice of merchandising quarters may be a means of maintaining or extending the display area for broilers. The retailer who traditionally sold quarters allocated additional space to broilers when he displayed quarters during the study. It was assumed that the additional display was the result of merchandising this extra cut.

Previous merchandising research has pointed out the principle that given a wider selection of grades, sizes, cuts, and prices, customers tend to buy more of a product. Merchandising quarters could serve to provide the customer with a wider choice of cuts and prices, thus increase purchases of broilers.

Quarters were used as an additional cut and given additional space in this study. Thus, these findings cannot be used to project the probable sales results when quarters are displayed in place of another part or when the broiler display is not enlarged to accommodate the added cut.

Four of the six test weeks were after Labor Day and the traditional season for outdoor cooking. Thus, to the extent that quarters are favored for barbecuing and other outdoor preparations, the timing of this study might lead to an under-estimation of the sales potential for quarters.

The proportion of sales in quarters reflected to some extent the interest of the meat department manager in merchandising this cut. Some managers showed interest in quarters and maintained attractive displays during the study. Others were indifferent and cut quarters only because it was required.

10/ For a discussion of times and cost of cutting and packaging broilers at retail and processing level see Saunders, R.F., and Jordan, M.P., "Tray Packing Fresh Fryers at the Store and Plant Levels," Maine Agr. Expt. Sta., Bull. 588, Jan. 1960.

The label containing an easily readable recipe was rejected as a beneficial sales aid. The short term sales effect on customer purchases should have been more immediate than the leaflet which had to be picked up voluntarily and read elsewhere. Attaching even a self-adhesive label to a package was time consuming and met with retailer resistance. Store personnel who already were inserting three to four labels in some meat packages looked with great disfavor on still another item to be attached to a package.

The complete rejection of the recipe leaflet is less certain, although a significant sales increase could not be associated with it. The customer had to pick up the leaflet voluntarily and likely read it at a later date since it was impractical to read it at the point-of-purchase. Thus, future sales may have been influenced.

Disappearance of the leaflet was noticeably greater in stores having customers of higher education and higher income. However, this research, which was conducted in a sample of stores representing all income groups, was not designed to appraise the sales effect on specific consumer groups or over long periods of time. Therefore, it cannot be stated with certainty that the leaflets had any influence on consumers of higher education and income levels.

There are some limitations to the widespread distribution of the recipe leaflet at point-of-purchase. It is bulky and expensive to distribute. Also, it requires a special holder to be displayed attractively and conveniently.

APPENDIX A

Experimental design used to assign treatments in testing the effect of cutting methods and recipe information on broiler sales, Columbus and Dayton, Ohio, August 20 - October 10, 1962.

Time Periods (week)	Dayton, Ohio						Columbus, Ohio					
	Stores						Stores					
	1	2	3	4	5	6	7	8	9	10	11	12
1	B ₁	B ₀	B ₂	A ₁	A ₂	A ₀	A ₀	A ₂	A ₁	B ₂	B ₀	B ₁
2	A ₁	A ₂	A ₀	B ₁	B ₀	B ₂	B ₀	B ₁	B ₂	A ₂	A ₁	A ₀
3	A ₂	A ₀	A ₁	B ₀	B ₂	B ₁	A ₁	A ₀	A ₂	B ₁	B ₂	B ₀
4	B ₂	B ₁	B ₀	A ₀	A ₁	A ₂	A ₂	A ₁	A ₀	B ₀	B ₁	B ₂
5	A ₀	A ₁	A ₂	B ₂	B ₁	B ₀	B ₂	B ₀	B ₁	A ₀	A ₂	A ₁
6	B ₀	B ₂	B ₁	A ₂	A ₀	A ₁	B ₁	B ₂	B ₀	A ₁	A ₀	A ₂

Legend:

A - Whole, whole-cut-up, and parts*

B - Whole, whole-cut-up, parts, and quarters**

0 - no recipe material

1 - recipe label on package

2 - recipe leaflet

*Parts including breast, legs, thighs, wings, backs, etc., but no quarters.

** Quarters designate either the leg or breast, each containing a portion of the back, after the bird has been split down the back. The breast portion was merchandised without the wing in Columbus and with the first wing joint in Dayton.

APPENDIX B

Basis of Evaluation

The sales effectiveness of displaying quarters and recipes was determined from total broiler sales per store per week. These sales were obtained from weekly inventories of stocks and audits of receipts. Estimates of the proportion of sales that were in quarters were made from daily cutting records maintained by meat department managers.

Total store sales (dollars) were used as an index of changes in purchasing power or fluctuations in buying because of the Labor Day holiday or pay periods. Display area which was not controlled or balanced in the research design was recorded weekly on Thursday and Friday.

Variation in broiler sales was broken down into the proportion associated with a particular store, city, week, cutting method, recipe material, and the unexplained or random (chance) sales fluctuation. Sales associated with cutting method and recipes were tested against the unexplained variation to determine if these sales were greater than expected from chance. In addition, sales were analyzed in relation to total store sales and broiler display area to see if sales were influenced by extra consumer demand or larger display area.

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON 25, D. C.

Official Business

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE